ISYE 3232 STOCHASTIC MANUFACTURING AND SERVICE SYSTEMS

Course Information

Course Prefix and Number: ISYE 3232
Credit Hours: 3
Instructor: TBA
Credit Hours: 3

Course Description

Manufacturing & service systems typically have random components to their behavior such as the demand for products and services. We will learn quantitative methods which are useful in analyzing, designing, and operating stochastic systems particularly manufacturing and service systems. Much of our attention will be focused on understanding, managing, and reducing variability for inventory, production and service systems.

Course Learning Outcomes

At the end of this course, students will be able to:
1. Model a system when randomness is significant
2. Describe how variability affects a system's behavior and performance
3. Apply Markov Chains
4. Apply basic inventory models
5. Define key concepts in production flow such as bottlenecks, line balancing, and Little's Law
6. Use open and closed Jackson networks
7. Maintain throughput in a closed Jackson network and compute corresponding WIP levels

Required Course Materials

Texts:
1. Goldratt, E, *The Goal: Process On Ongoing Improvement*, North River, 3rd Ed., 2003.
2. *Littlefield Technology Access Case*, Responsive L, 2007.

References
1. Feldman, R.M., and Valdez-Flores, C., *Applied Probability and Stochastic Processes* (custom printing), Thomson, 2004.

Grading Policy

TBA

Attendance Policy

TBA

Academic and Research Honesty/Integrity Statement

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review the Student Code of Conduct and the Academic Honor Code, especially Appendix A: Graduate Addendum to the Academic Honor Code.

Students are expected to perform research in an ethical and responsible manner. All Doctoral and Master's Thesis students are required to take the Responsible Conduct of Research training, and it is expected that students abide by the principles taught in that training while performing research.

Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Allegations of scientific or scholarly misconduct are handled in accordance with the procedures outlined by the Policy for Responding to Allegations of Scientific or Other Scholarly Misconduct.

Core IMPACTS

TBA

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulates some basic expectations that you can have of me and that I have of you. Additional information for research-related work is given in The Expectations of Advisors and Advisees. In the end, simple respect for knowledge, hard work,

and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.